Listing of the Claims:

1. **(previously presented)** A ceramic filter for trapping and combusting diesel exhaust particulates comprising an end-plugged cordierite honeycomb structure, wherein:

   a quantity $d_{50}/(d_{50}+d_{90})$ as related to pore size distribution less than 0.70;

   a soot loaded permeability factor S_f, as defined by the equation $[d_{50}/(d_{50}+d_{90})]/[\%porosity/100]$, is less than 1.55;

   a coefficient of thermal expansion (25-800°C) is no greater than 17×10^{-7}/°C, and

   median pore diameter, d_{50}, is less than 15 micrometers.

2. **(original)** A ceramic filter according to claim 1 wherein the soot loaded permeability factor S_f, is between 0.83 and 1.40.

3. **(original)** A ceramic filter according to claim 2 wherein the soot loaded permeability factor S_f, is between 0.83 and 1.35.

4. **(original)** A ceramic filter according to claim 1 wherein the quantity $d_{50}/(d_{50}+d_{90})$ is less than 0.65.

5. **(original)** A ceramic filter according to claim 2 wherein the quantity $d_{50}/(d_{50}+d_{90})$ is less than 0.60.

6. **(original)** A ceramic filter according to claim 1 wherein the coefficient of thermal expansion (25-800°C) is less than 10×10^{-7}/°C.

7. **(original)** A ceramic filter according to claim 6 wherein the coefficient of thermal expansion (25-800°C) is less than 5×10^{-7}/°C.

8. **(previously amended)** A ceramic filter according to claim 1 wherein a median pore diameter, d_{50}, is at least 4 micrometers and less than 15 micrometers.

9. **(previously amended)** A ceramic filter according to claim 8 wherein the median pore diameter, d_{50}, is between 6 micrometers and 15 micrometers.

10. (**original**) A ceramic filter according to claim 9 wherein median pore diameter, d_{50}, is between 7 micrometers and 15 micrometers.

11. (**original**) A ceramic filter according to claim 1 wherein a quantity d_{90}/d_{50} as related to pore size distribution is greater than 0.40.

12. (**original**) A ceramic filter according to claim 11 wherein the quantity d_{90}/d_{50} as related to pore size distribution is greater than 0.55.

13. (**original**) A ceramic filter according to claim 12 wherein the quantity d_{90}/d_{50} as related to pore size distribution is greater than 0.60.

14. (**original**) A ceramic filter according to claim 1 wherein a quantity $(d_{50}-d_{90})/d_{50}$ as related to pore size distribution is less than 0.60.

15. (**original**) A ceramic filter according to claim 1 wherein the quantity $(d_{50}-d_{90})/d_{50}$ as related to pore size distribution is less than 0.50.

16. (**original**) A ceramic filter according to claim 1 wherein the quantity $(d_{50}-d_{90})/d_{50}$ as related to pore size distribution is less than 0.40.

17. (**original**) A ceramic filter according to claim 1 wherein a porosity is at least 40% by volume, and less than 60%.

18. (**original**) A ceramic filter according to claim 17 wherein the porosity is 50% by volume.

19. (**original**) A ceramic filter according to claim 18 wherein the porosity is 55% by volume.

20. (**original**) A ceramic filter according to claim 1 wherein a filter volumetric heat capacity is at least 0.67 J cm^{-3} K^{-1} at 500°C.

21. (**original**) A ceramic filter according to claim 1 wherein the filter volumetric heat capacity is at least 0.76 J cm^{-3} K^{-1} at 500°C.

22. (**original**) A ceramic filter according to claim 1 wherein the filter volumetric heat capacity is at least 0.85 J cm^{-3} K^{-1} at 500°C.

23. (**original**) A method for fabricating a wall-flow filter and comprising:

(a) forming a batch of raw materials comprising magnesium oxide, alumina and silica raw materials in combination with extrusion forming aids;

(b) plasticizing and shaping the batch, wherein the shaping is done through an extrusion die to form a green honeycomb body having an inlet end, an outlet end, and a multiplicity of cells extending from the inlet end to the outlet end;

(c) drying and firing the green honeycomb body to form a structure which is predominately of a phase approximating the stoichiometry of $Mg_2Al_4Si_5O_{18}$ and exhibits a pore size distribution as determined by mercury porosimetry in which the quantity $d_{50}/(d_{50}+d_{90})$ is less than 0.70; a soot loaded permeability factor S_f, as defined by the equation $[d_{50}/(d_{50}+d_{90})]/[\%porosity/100]$, of less than 1.55; and,

a coefficient of thermal expansion (25-800°C) of no greater than 17×10^{-7}/°C;

(d) plugging a first portion of cells at the inlet end, and a second portion of cells at the outlet end such that each cell is plugged at only one end.

24. (**original**) The method of claim 23 wherein the batch further includes spinel having a stoichiometry of $MgAl_2O_4$.

25. (**original**) The method of claim 23 wherein the batch further includes a pore former.

26. (**original**) The method of claim 25 wherein the pore former is selected from the group consisting of graphite, cellulose, starch, polyacrylates and polyethylenes, and combinations thereof.

27. (**original**) The method of claim 26 wherein the pore former has a median particle diameter of 3-140 micrometers.

28. (**original**) The method of claim 27 wherein the pore former has a median particle diameter of 5-80 micrometers.

29. (**original**) The method of claim 28 wherein the pore former has a median particle diameter of 10-50 micrometers.

30. (**original**) The method of claim 23 wherein magnesium oxide is supplied from the group consisting of magnesium oxide, magnesium hydroxide, magnesium carbonate, magnesium nitrate and mixtures thereof.

31. (**original**) The method of claim 23 wherein the alumina is supplied from the group consisting of aluminum oxide, aluminum hydroxide, hydrated alumina, alpha alumina, gamma-alumina, rho-alumina, boehmite, aluminum nitrate, aluminum carbonate and mixtures thereof.

32. (**original**) The method of claim 23 wherein the silica is supplied from the group consisting quartz, cristobalite, fused silica, sol-gel silica, zeolite, colloidal silica, alpha quartz, and mixtures thereof.

33. (**original**) The method of claim 23 wherein the extrusion forming aids comprise 2-10% by weight methylcellulose as binder, and 0.5-1.0% by weight sodium stearate as lubricant.

34. (**original**) The method of claim 23 wherein the firing is done at a rate of 15-100°C/hr to a maximum temperature of 1405-1430°C, with a hold of 6-25 hrs.